DESIGNING FOR MUSIC CONSUMPTION IN AN INTERNET AGE

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THE MUSIC INDUSTRY

is a useful case study for a broad range of emerging digital products. Digital music can be stored and shared easily facilitating free distribution among listeners. Recording, selling, and marketing are more accessible, allowing artists to produce music independently. While these trends seem to suggest a decentralized model for music distribution, a few record labels continue to dominate the industry. In this study, we survey music consumers to better understand their needs and gauge their attitude about various aspects of the music industry. We use this information to outline the implications for the design of future music consumer products.

ABSTRACT

INTRO DUCTION

While demand for music remains strong, the value of the global recorded music industry shrunk by 31% from 2004 to 2010 [10]. The music industry is quick to blame this decline on piracy and has redirected a large portion of their resources towards lobbying for tighter intellectual property restrictions and increased policing [2]. Tactics used to prosecute intellectual property infringers risk alienating the new generation of music consumers [17]. While regulatory methods have been largely unsuccessful atstopping piracy and increasing profits, the music industry may consider developingdifferent business models for music consumption in an Internet age.

Conditions confronting the music industry can be viewed from the perspective of other markets that have moved online. Infinite shelf space allows online retailers to carry a range of diverse items rather than just the top sellers. This has created what is known as long tail markets, characterized by having a vast amount of products that only appeal to a small number of people but together agree that the account for a large portion of the market [7,8]. In the music market, the long tail can be seen in the increased demand for less popular music [19] and experts agree that the cheaper costs of manufacturing and distribution associated with online markets have greatly advanced the development of independent music [15]. While many studies reveal the long tail effect in the music industry[7,8,19,14], the current structure of the established industry makes capitalizing on long tail markets difficult. Four record labels dominate the music market, representing 89% of the market share in album sales [13], and they are historically slow to adapt to technological change [15].These labels continue to operate under the opposite assumption of the long tail: the superstar effect, which predicts that consumers will listen to the most popular artists in order to minimize search costs associated with finding music [1]. They concentrate their efforts on creating a few stars to appeal to mass audiences [3]. With the great costs expended on production and promotion, major labels only make money after the music that they produce reaches the top charts [15].

Amidst changing technology and overall industry confusion, we look to music consumers for insight. In this research project, we survey music consumers about the process of discovering, listening, and purchasing music. We seek to gain a better understanding of consumers' needs and frustrations within this process and gauge their attitudes toward record labels and independent artists. We use this information to propose implications for designing better technology for music consumers.

RELATED WORK

Most of the current studies on

music consumer behavior focus on music piracy. It has been shown that music consumers can be grouped into 5 categories based on downloading habits suggesting that pricing policies and promotion strategies can be targeted specifically to each group in order to increase profitability [12]. Another study looks at consumer behavior as it relates to seeking information about music and shows that consumers seek out public information like ratings, reviews, and contextual meta data such as associations with TV shows, commercials, or movies [11]. Both of these studies survey music consumers but use mostly quantitative data and focus on a narrow subject. We study music consumer behavior at a high level using a mix of quantitative and qualitative measures to identify what areas within the music industry need to be further adapted to online markets. We pay special attention to music consumers' relationship with record labels and independent artists in order to inform decisions on the role that long tail music should play in future music services.

RESEARCH METHODS

We chose to deploy an online

survey to gain more insight about music consumers. The complete survey, which includes both multiple-choice and open-ended questions, is shown in Appendix 1. We piloted the survey with six Human-Computer Interaction researchers in order to refine the questions. Participants were recruited through posts on online music forums, Facebook, and email lists. In total, 91 people participated in the survey. Figure 1 shows the demographic information of the respondents. We performed a thematic analysis on the answers of the open-ended questions using qualitative research methods outlined by Strauss and Corbin [18]. This data was further supplemented by descriptive statistics calculated from the results of the multiple-choice questions. We report on both the responses to the closed survey questions and the qualitative responses from the open survey questions.

RESULTS

We first discuss what

music our participants choose to listen to and why. We look specifically at their attitudes toward mainstream and independent music. Next, we explore how our participants find music and uncover many frustrations that they have in this area. Finally, we look at how our participants obtain music and explore their motivations, if any, for buying music.

Figure 1: Demographic Information from survey participants

Total Participants	91
Average Age	28.9
Gender Make-up	55% Males, 45% Females
Common Occupations	47% Students,
Location	62% Atlanta area, 17% out of state, 4% international
Time Spent Online	All reported to spend at least some time online each day, with 57% of them spending more than 5 hours online each day

MUSIC TASTES: MAINSTREAM VS. LESSER KNOWN

The superstar effect

[1] predicts that consumers will stick to mainstream artists in order to minimize search costs; however, our data shows the opposite. When asked: "Is most of the music that you listen to considered mainstream?" 66% of the respondents said no. Participants said that mainstream music is *"overplayed" (P5)* and *"not as authentic" (P71)*. In fact, some respondents like music more because it is unknown. For instance, a student from Atlanta, Georgia writes that it is *"nice to listen to something most other people haven't heard of" (P2)*. While participants self-reported that they avoid mainstream music, this was supported by assessing the popularity of their three favorite bands. To get an idea of each band's popularity, we checked to see if they had a song in the Billboard "Hot 100" chart, the industry standard way of identifying the most popular songs based on radio play and sales. Since this chart is specific to domestic sales, responses from international participants were excluded from this analysis. For the purposes of this study, we considered respondents that listed 2 or more bands with "Hot 100" hits as mainstream. By this measure, 59% of the domestic respondents have obscure musical tastes, while only 41% have mainstream tastes. This data suggests that the superstar effect is not particularly helpful in predicting music choices.

Because major labels base their business in producing mainstream music, it is not surprising that we find their reputation damaged as consumers make more obscure music selections. Some participants have given up on them completely, citing that they like music that is *"too obscure to be picked up by big labels" (p19)*. We also saw criticisms about what music labels chose to produce. A programmer from McDonough, Georgia thought that labels *"make poor decisions in terms of variety and innovation" (p38)*.

For many of the same reasons for not liking big record labels, participants had a very positive impression of independent artists. They reported that independent artists have *"unique" (p43, p90)* music that is more *"interesting" (p31, p79)* to listen to. They also liked being able to talk to the artists and form a more intimate connection with them. On the other hand, some participants expressed wanting to listen to more independent music but they *"don't have time to explore independent artists" (p84)*. A designer from Brooklyn, New York says that he listens to independent artists *"as much as possible, although they are more difficult to learn about" (p36)*. Similarly, an engineer in Cambridge, Massachusetts wrote: *"I'd like to be more connected to indy music but don't bother to spend time searching it out"(p33)*. These responses are more in line with the superstar effect, but they also show the desire to change the available techniques to create better ways to find music.

Figure 2: Measuring Mainstream Based on the Number of Favorite Bands with "Hot 100" Hits

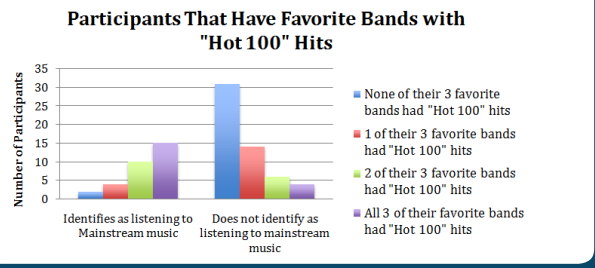
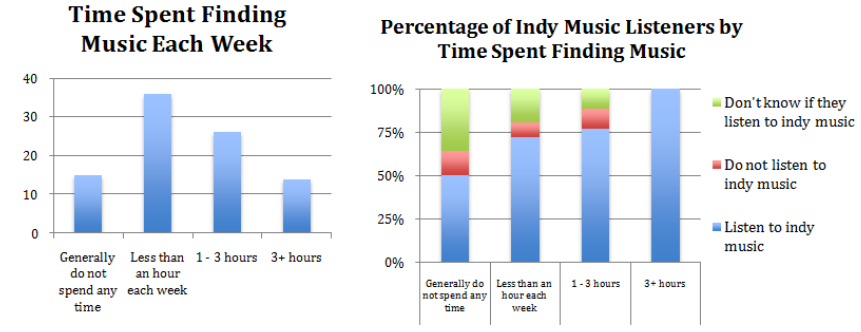


Figure 3: Time Finding Music



Finding music can be a time

consuming process, especially if one listens to independent or "indy" music. We asked participants how much time they spend discovering new music each week. 84% of the survey respondents report to spend at least some time each week dedicated to this task while 43% of the respondents spend more than an hour. We also asked participants if they listen to independent music. Overall, 75% of the respondents said yes. Only 9% said no, while 16% did not know. We then compared the data of time spent discovering music to data about listening to independent music. As shown in Figure 3, the likelihood that respondents listen to independent music correlates positively with the time that they spend finding music. This further suggests how important the time component is to discovering independent music, perhaps because this music is not considered mainstream.

Our participants also expressed dissatisfaction about the current recommendation systems such as the iTunes' Genius feature, Pandora, or last.fm. For instance, a student from Columbia, South Carolina said: *"even though I use last.fm, it rarely recommends music that I haven't already heard or like" (p56)*. Similarly, the designer from Brooklyn said that he finds algorithmic methods lacking, predictable, and lame. He blames this on the fact that *"computers have no souls" (p36)* and, therefore,l unable to accurately recommend music that he likes. These responses convey a complex and artful process behind choosing music.

Finding music is further complicated because the criteria for choosing music differs from person to person. We have found that our respondents consider many factors when choosing music aside from what the music sounds like. For instance, we had participants mention everything from knowing a band's influences and history to knowing the band's *"political aspirations" (p35)* or if they *"donate their profits to charity" (p62)*. Since there are many factors to consider when choosing music, we asked participants how they currently find music. As shown in Figure 4, the most popular response was recommendations from friends, with websites following closely behind.

Figure 4: Ways Participants Find Music

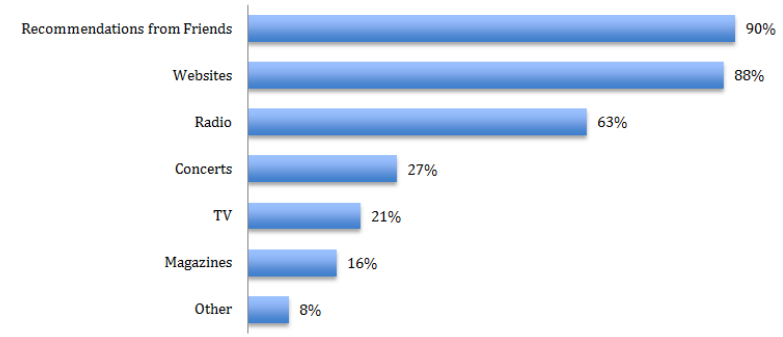
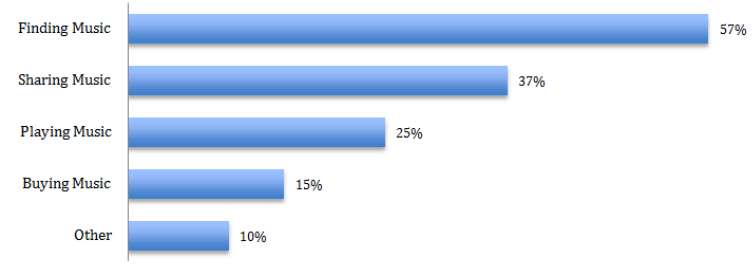


Figure 5: Areas Participants Want Improved



The popularity of recommendations from friends testifies to the important social aspect in the process of finding music. Instead of websites that provide complex algorithms to recommend music, many of our participants expressed that they would rather have websites that would allow them to connect with other people to recommend music. For instance, a professor from Atlanta said: *"I'd like to follow some of my friends music acquisitions as much as I follow their web bookmarks" (p27)*. Similarly, a student in Atlanta said that she wants browsers *"to find people with similar tastes, make new friends, and find local concert buddies."*

The responses to the survey question: *"What areas would you like music technology to be improved?"* as shown in Figure 5 are consistent with the data we have presented so far, listing finding music as the number one response, followed by sharing music. Comments from participants suggest that the best way to improve ways to music is to improve ways to share music. Unfortunately, common ways to share music are subjected to increased criminalization following the decline of music sales. To examine this problem, we now look at our participants' motivations for buying music.

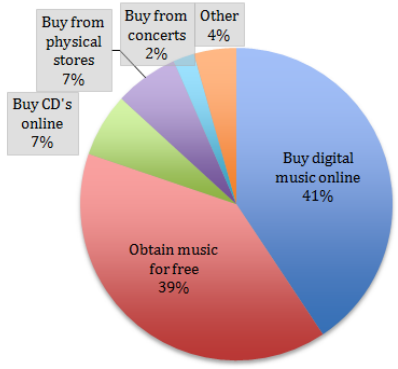
DISCUSSION

As shown in Figure 6, most of the

participants reported that they primarily buy digital music online, but an almost equal number reported that that they find ways to obtain music for free. Of those that obtained music for free, 73% saidthat they do feel compelled to pay for some music.We asked these people what criteria they use to judge what music to pay for and why.

16 participants reported they buy music based on how much they listen to it and how much they like it. Most of all,we found that participants do not want to pay for uncertainty. For instance, a user experience researcher from Seattle, Washington said: *"I'd like longer or better previews that make me sure I'm going to like something before I buy" (p39)*. If appropriate previews are not available, some of the respondents reported to find ways to self-preview. For example, a student from Atlanta, Georgia said: *"I digitally download music for free and if it's really good I'll buy the record" (p69)*. Responses show that participants put great thought and care into deciding who gets their money. We found that respondents are more inclined to pay for bands that they feel need support, like upstarts and independent bands, rather than commercial artists. For example, a student from Atlanta said: *"I tend to pay for Indie CDs because those bands are still getting started and I want them to succeed" (p23)*. Just as we saw in the previous section with deciding what music to listen to, many factors also play into what music participants chose to purchase.

Figure 6: Primary Ways of Obtaining Music



We surveyed music

consumers about how they discover, listen to, and purchase music. We found that the majority of participants are no longer drawn to mainstream music and showdistaste for large record labels while admiring independent artists. Exploring music outside of the mainstream allows consumers to find music better suited to personal tastes but makes the task of finding this music highly time consuming. Participants find music most successfully by utilizing social mechanisms such as recommendations from friends or sharing. A large portion of participants do not pay for most of the music that they consume and hold high standards for the music that they do purchase. At the same time, participants show a strong desire to support upstart and independent musicians. While the results from this study do not arouse hope for the reemergence of the music industry by conventional means, they do elicit inspiration for new designs of better music services.

BACKLASH AGAINST MAINSTREAM MUSIC

Our results show a backlash against mainstream music and record labels that support it but a desire for more independent music. We suggest improving ways for smaller artists to succeed without reliance on a major label. Already, artists can produce and distribute music without a record label thanks to technological advances. Yet other functions such as investment and promotion have not been completely realized outside record labels; however, the willingness of consumers to support independent artists indicates that these tasks can be solved with a fan-based approach. For example, a fan-based investment system could allow music fans to lend financial support to independent artists that they like. The ability to potentially earn returns would entice fans to make investments and also give them an extra incentive for promoting the band. For example, the online project-funding platform Kickstarter allows people to pledge money to support projects and receive gifts for certain pledge levels. This has become a popular place for bands to seek funding for recording new albums. Our findings suggest that the development of additional tools to support independent artists in this regard would be well received by music consumers.

COMPLEXITY IN MUSIC DISCOVERY

Music consumers go through trying to find the right music to fit their particular tastes. Our study relates the often complex and time-consuming process behind discovering new music. Instead of trying to automate the discovery process, our findings suggest that more social mechanisms such as recommendations from friends should be employed when making music suggestions. One could envision more music services for sharing recommendations or following what friends are listening to. For example, a tool that creates a playlist from songs that friends have purchased in the past week would help users keep track of what their friends are listening to and constantly make new music available for listening. The limited availability of the songs would create an incentive for users to purchase the music that they liked from the playlist after the week period.

In summary, technological changes have not only changed the medium in which we receive music, but also in the way that we fundamentally interact with music. We have discussed two implications for the development of new music services better adapted to these changes: 1) Create more fan-based alternatives to record label functions for independent artists and 2) Use social mechanisms over algorithmic methods for making music recommendations. These suggestions are based on the experience of music consumers. Future research could focus on how musicians interact with music technology to gain insights in creating new services that addresses the needs of the artists as well as the consumer.

CONCLUSION

The music industry is one of many industries struggling to adapt to the digital world. In this paper, we surveyed music consumers and observed the effects of the digital transition of music in consumer's music tastes, ways for finding music, and spending habits. This research focused on music consumer technology, but these trends are applicable to other consumer goods that have made the digital transition like movies or books. We suggest two directions for future music services and encourage developers to take greater consideration of the demand of lesser-known artists in their designs.

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ACKNOWLEDGEMENTS

Thank you to all of the participants in this study and also to (name removed for review process) for her valuable mentorship through this process. This work was supported by the President's Undergraduate Research Award presented by the Undergraduate Research Opportunities Program at Georgia Tech.